NOTES.

The president of the Board of Trade has appointed a committee to consider and advise as to the best means of obtaining for the use of British industry sufficient supplies of chemical products, colours, and dyestuffs of kinds hitherto largely imported from countries with which we are at present at war. The committee is constituted as follows:—Lord Haldane (chairman), Dr. George T. Beilby, F.R.S., Dr. J. J. Dobbie, F.R.S., Mr. David Howard, Mr. Ivan Levinstein, Prof. Raphael Meldola, F.R.S., Mr. Max Muspratt, Prof. W. H. Perkin, F.R.S., Mr. Milton Sharp, Sir Arthur J. Tedder, Mr. Joseph Turner, Mr. T. Tyrer, with Mr. John Anderson, of the National Health Insurance Commission, and a representative of the Board of Trade. The secretary of the committee is Mr. F. Gossling (of the Patent Office), to whom all communications should be addressed at the Commercial Intelligence Branch of the Board of Trade, 73 Basinghall Street, E.C.

The closing of the Baltic ports and shortage of labour in the Bordeaux district of France have greatly reduced the normal supply of pitprops. As the provision of an adequate supply of mining timber is of great importance, the Board of Agriculture and Fisheries, in cooperation with the English Forestry Association, are taking steps to stimulate the marketing of home-grown timber. The timbers most in demand are larch, Scotch pine, and spruce of 3-in. diameter and upwards at the small end, but small hardwood timbers, such as oak, coppice, and beech are used to some extent. The standard lengths of pitprops differ in the various districts. Owners of extensive woods who may have timber which they consider suitable for this purpose but are in doubt as to the best method of marketing it or of obtaining it with least damage to the future welfare of their plantations, are invited to communicate at once with the secretary of the Board of Agriculture and Fisheries, or with the secretary, English Forestry Association, Farnham Common, Slough, Buckinghamshire.

The present crisis will affect the electrical industry on account of the shortage of carbons for arc lighting. There is only one works manufacturing carbons in this country, the great majority of carbons having been imported from Germany and Austria. France also exports carbons to England, and there is a small factory in Spain. A limited supply may be available from Spain, but no imports are, of course, available from Germany and Austria, and the French factory is situated in the heart of the fighting at Nancy. The only carbon factory in America cannot do more than supply American wants, even if it is able to do this, as America imports carbons largely from Germany. Public lighting as well as the electrical industry will suffer, owing to the neglect and refusal of electric lighting authorities to support the enterprise which twelve years ago started manufacturing carbons in this country. The Admiralty and certain other Government departments which have recognised for some time past the necessity of having a source of supply independent of foreign carbons are now reaping the reward of their foresight in being able to obtain their supplies in this country. The present output of the carbon works in question is not sufficient to supply more than one-tenth of the carbons required in this country, but a very different state of affairs would have been the case if the carbon works had been properly supported in the past, for, in this case, the works would by now have been at least three or four times their present size. We can only hope that sufficient support will be given to British-made carbons in the future to allow of the present works being extended sufficiently to meet at least all public lighting demands for this country.

While continuing their excavations in the Piltdown gravel last week, Mr. Charles Dawson and Dr. A. Smith Woodward met with a second portion of a molar tooth of Mastodon larger and more characteristic than the fragment originally described. The new specimen agrees well with the teeth of *Mastodon arvernensis* found in the Red Crag of Suffolk, but it is merely a waterworn hindmost ridge, and is evidently a derived fossil of earlier date than the deposition of the Piltdown gravel itself.

Two important additions have been made to the exhibited collection of Ichthyosaurians in the British Museum (Natural History). A nearly complete skeleton of Ophthalmosaurus, collected with great skill by Mr. Alfred N. Leeds from the Oxford Clay of Peterborough, has been mounted on an iron framework with all the bones approximately in their original relative positions. It is thus possible to realise the shape and proportions of this reptile during life much more readily than can be done by an examination of the crushed specimens in slabs of rock. The closeness of the ribs immediately behind the shoulder-girdle is especially interesting. The vertebral column is stoutest at the hinder end of the abdominal region, and the downward prolongation in the lower lobe of the tail-fin is gracefully curved. The paddles must have been very flexible, with much cartilage between the ossifications, and the hind paddles are so small as to be almost rudimentary. A slab of Upper Lias from Holzmaden, Würtemberg, shows a complete skeleton of *Ichthyosaurus acutirostris* with the surrounding soft parts as a bituminous impression on the rock. The specimen is one of the finest examples of Mr. Bernhard Hauff's work in preparing such fossils. The triangular dorsal fin and the vertically extended tail-fin are clearly seen, and there are several structures in the dorsal region of the trunk which still need interpretation.

As already announced, in consequence of the war the Comité des Forges de France has been obliged to cancel all arrangements for an autumn meeting of the Iron and Steel Institute in France this year. In the circumstances, the council of the institute has decided that it would be advisable to postpone for the present the organisation of any alternative arrangements for an autumn meeting for the reading and discussion of papers. A number of papers have been submitted with a view to their presentation at the meeting which was to have been held at Paris, and the council proposes to print in the usual way advance copies of those papers approved for publication and to invite discussion thereon by correspondence. It is expected that the copies will be ready for issue about the second week in September.

THE following resolution has been passed by the Chadwick trustees.—That in view of the immense importance of encouraging in every way the promotion of careful sanitary organisation in the naval and military services during the present campaign, the Chadwick trustees have resolved under the powers conferred upon them under the scheme they administer to announce their intention to award at the close of this year the Chadwick gold medal and 50*l.* each to the naval and military medical officer respectively in the British service who shall have distinguished himself most in promoting the health of the men in the Navy and the Army. The nomination for such presentations to be, as provided by the terms of the trust, by the directors-general of the naval and military medical services respectively.

IN vol. viii., No. 6, of the *Philippine Journal of Science,* Mr. R. B. Bean discusses certain types among the inland tribes of Luzon and Mindanao. He postulates three distinct migrations from Europe: one from Europe direct, without mingling with intervening peoples, as represented by the almost pure European types in the heart of Luzon and Mindanao; one by way of India, in which the types are the Indian and the so-called Malay; and one from Arabia and North Africa, the Mohammedan of history. There is also evidence among the Ilongots of another European element migrating through Siberia, possibly through China, and also from Japan. The Australoid type may antedate the Negritos, it may have resulted from them by crossing with other types, or it may have been brought in with the other types in the mingling migrations of the Europeans.

IN their report on the ethnozoology of the Tewa Indians of New Mexico by Messrs. J. Henderson and I. P. Harrington, published as Bulletin 56 of the Bureau of American Ethnology, the writers give a striking picture of the changes in the environment and fauna of the region due to the advent of the white man. The land was originally well grassed, and supported a large head of varied game. On the introduction of great herds of cattle from Texas, the situation rapidly changed. The grasses disappeared under their tongues and hoofs, many species of vegetation vanished, the surface became denuded of humus, and the underlying stones and gravels were exposed. In one pueblo in Arizona bones of thirty-seven species of animals were discovered in the rubbish heaps; it is not probable that five of these could now be collected. The writers also show that the current belief which attributes to the Indians an almost magical power of discriminating and naming the varieties of plants and animals is erroneous. They do distinguish species more closely than the average white man without training in botany or zoology; but they naturally fail to recognise the more minute differences, many of which are microscopic.

A NUMBER of striking photographs of the northern, or Lado, race of the white rhinoceros (*Rhinoceros simus cottoni*) serve to illustrate the second instalment of notes on African big game, by Mr. Russell Roberts, in the August number of *Wild Life*, this portion also concluding the account of the African elephant.

THE *Egyptian Gazette* of August 12 announces the arrival at the Gizeh Zoological Gardens of a consignment of 118 animals from the Sudan, for the most part presented by English and native donors, official and otherwise. The series includes thirty-seven mammals, sixty-six birds, and fifteen reptiles, representing forty species and races. Among the first is a vervet monkey (*Cercopithecus pygerythrus*) from the Mongalla district, a species previously unknown north of East Africa. The menagerie at Gizeh has also received a Mediterranean seal (*Monachus albiventer*), a species formerly abundant on the coasts of the sea from which it takes its name, but now unknown on the Egyptian coast west of Alexandria, although a few still remain in Tunisian waters, while a straggler is from time to time taken in the Adriatic.

IN a useful article by Mr. R. C. Mossman in *Symons's Meteorological Magazine* for August on the renewal of Antarctic exploration and research, it is pointed out that the interest in this subject is shown by the fact that the plans of four specified expeditions have been before the public for some time. A map has been prepared giving the positions where meteorological and other observations have been made, and the number of years over which they extend. This map shows that "only over one-third of the S. Polar area south of 60° S., and extending in one instance only so far as 78° 30′ S., have we even a general knowledge of the climatic features throughout the year." A considerable part of the available data relates to summer conditions only, and, as the author remarks, it is a matter for congratulation that in the near future we may look forward to a substantial addition to our knowledge of the meteorology of those regions.

THE report of the Meteorological Committee for the year ended March 31 shows that considerable changes have taken place, owing to a liberal increase of the Parliamentary grant. Among the more important items may be mentioned (1) the institution of a grade of junior "professional" assistants (with University qualifications) for meteorological and geo-physical work. (2) The satisfactory termination of negotiations with the Scottish Meteorological Society; one of the several advantages is the inclusion in one publication of available climatological data for all parts of the British Islands. (3) A notable improvement in the reconstruction of the central ("Kew") observatory, after the departure of the assistants belonging to the National Physical Laboratory, and a considerable addition to the instrumental equipment. (4) The establishment of a "weather station" at Falmouth, in conjunction with the Royal Cornwall Polytechnic Society, in place of the photographic recording observatory, for the purpose of special researches in weather prediction, and the investigation of the upper air. It is satisfactory to note some improvement in the rate of transmission of wireless reports; a wireless receiving apparatus has been installed at the office for messages forwarded from the Eiffel Tower. Comparisons of the weather forecasts and storm warning telegrams for the United Kingdom with subsequent weather show that the percentage successes have been very satisfactory. As an appendix to Dr. Shaw's interesting report is reprinted a circular containing useful particulars relating to the international units of measurement recently adopted

SOME interesting notes on the changes occurring during the manufacture of tea are given in a paper by Mr. S. Sawamura in the Bulletin of the Imperial Central Agricultural Experiment Station of Japan. In the manufacture of green tea the oxidising enzymes of the leaf are killed by steaming, but it is essential that the steaming should not be too far prolonged, otherwise other enzymes, which play a part in the production of the aroma, are also destroyed, and the subsequent quality is impaired. The effect of rolling the leaves is to increase the easy solubility of the constituents which give quality to the infusion, and at the same time desiccation of the leaves is also accelerated owing to juice being pressed out from the interior of the cells. Experiments are also described showing the effect of different temperatures during the "firing" of the leaves.

AN interesting contribution to the study of the formation of hydrogen cyanide in plants is contained in a paper by Prof. A. Jorissen in the Bulletin of the Royal Academy of Belgium (1914, p. 130). It is shown that citric acid in presence of oxidising agents and a trace of a nitrite gives rise to hydrogen cyanide, probably owing to the action of the nitrite on acetonedicarboxylic acid, which is the first product of the oxidation. In dilute solution and in sunlight it is shown that small quantities of ferrous or ferric salts can effect the preliminary oxidation of the citric acid, even ferrous bicarbonate being sufficient for the purpose. Citric acid is widely diffused in plants, and light, which brings about its oxidation in presence of traces of iron, is also well known to favour cyanogenesis. It is probable therefore that the above described synthesis of hydrogen cyanide is one which is realised in the actual plant in many instances.

THE success of the "Tee" process for the production of white salt from rock-salt gives occasion for an illustrated article in *Engineering* for August 21, descriptive of the works now in operation at Carrickfergus, in Ireland. In this process the rock-salt is fed into a gas-fired furnace, where it melts and runs from the furnace into a "bath." The bath contains a slagging chamber, on the floor of which the greater proportion of the impurities is deposited; the molten salt then reaches other two chambers in the bath, each containing a 3 in. wrought iron pipe with a number of $\frac{1}{8}$ in. holes through which compressed air at a pressure of from 8 to 10 lb. per sq. in. is blown. The state of agitation into which this throws the molten salt results in a further deposit of slag in both chambers. The molten salt then passes slowly through a settling-chamber, thence to a reservoir, and finally through two tap-holes to the rotary pans. The rotary pans crystallise the molten salt in one operation by means of stationary rakes, the latter performing the function of agitating the rapidly-cooling molten salt in such a manner as to crystallise it, ready for the market, in various grades, and sized according to requirements. The total rated capacity of the three furnaces at Carrickfergus is 70 tons of refined salt in 24 hours. The whole operation is continuous, the salt being deposited in a finished state ready for the market within half-an-hour of coming out of the mine.

THE Cambridge University Press has added two further volumes to its series of Cambridge County Geographies, which when complete will cover the whole of the British Isles. One volume is on Glamorganshire, and is written by Mr. J. H. Wade; the other deals with Durham, and is by Mr. W. J. Weston. As in other cases, the books are brightly written, and give a readable account of the geography and geology of the areas, followed by a description of their economic resources and history. The maps, illustrations, and diagrams will maintain the high standard reached in previous volumes.

OUR ASTRONOMICAL COLUMN.

THE RECENT PERSEID SHOWER OF METEORS.—Mr. Denning reports that many observations from various stations have come to hand, and that the results are of a singularly interesting character. Though the shower was rather noteworthy for its brilliant meteors it was not exceptional as regards numbers. The fine weather which prevailed afforded some recompense for the moonlight. More than thirty bright meteors were observed at two stations or more, and their heights, radiants, and velocities have been found. The maximum occurred on August 11, but there were a few belated Perseids as late as August 20. One feature of the recent shower was that a number of fine meteors were not Perseids, but members of one or other of the many minor radiants which abound at this time of the year. The most conspicuous of these was in Lyra at $280^\circ+44^\circ$, and there were others at $292^\circ+51^\circ$, $312^\circ+61^\circ$, $354^\circ+77^\circ$, $309^\circ+6^\circ$, and $74^\circ+33^\circ$.

The last three showers were seen during the latter part of the month. The Aquilids at $309^\circ+6^\circ$ appear to form a new display, which, if it has been previously visible, seems to have eluded detection. The meteors are bright and move slowly in rather long flights. The display in Auriga at $74^\circ+33^\circ$ forms a pretty active display of swift conspicuous meteors leaving bright streaks. This shower was also seen on the morning of August 28, 1881, by Mr. Denning. He describes the meteors as being of very great velocity, and often having very extended flights across the firmament. A brilliant member of the stream was recorded on August 28 last at 10h. 25m. p.m., moving along a path of 84° from a few degrees N. of α Arietis, almost to the planet Jupiter. It was also seen from Kent, where its path was estimated as 100° long. It passed from over Kent to the English Channel about seventy-five miles S. of Portland Bill. Path, 182 miles, and velocity forty-five miles a second.

COMET 1913*f* (DELAVAN).—The accompanying chart is intended for the use of those who desire an easy means of finding Delavan's comet, which is now a